DOCUMENT RESUME

ED 126 290 CE 007 310

TITLE A Study to Investigate and Clarify the Role of Industrial Arts in Colorado and Its Interface with Vocational Education: Final Report: Volume I, Narrative Report.
INSTITUTION Colorado State Univ., Ft. Collins.
SPONS AGENCY Colorado State Board for Community Colleges and Occupational Education, Denver.
PUB DATE Apr 76
NOTE 78p.

EDRS PRICE MF-$0.83 HC-$4.67 Plus Postage.
DESCRIPTORS Conference Reports; *Educational Planning; Educational Policy; *Industrial Arts; Policy Formation; Program Evaluation; Questionnaires; Secondary Education; *State of the Art Reviews; Statewide Planning; *Vocational Education
IDENTIFIERS *Colorado

ABSTRACT

The study focuses on the purpose and role of industrial arts in Colorado with particular attention to its relationship with vocational education. The study was based on: (1) a review of current literature (presented in Volume 2, which is not available for copyright reasons); (2) data collected from industrial arts, trade and industrial education, and secondary technical education teachers in Colorado as well as information about school programs and industrial arts programs in other States; and (3) nine area communication sessions throughout the State conducted by the Colorado Industrial Arts Association. A 22-page discussion of the collected data is presented with supporting tables. A three-day conference was held to interpret the data and to propose recommendations. Participants included 25 teachers, supervisors, teacher educators, local vocational education directors, State department personnel, and career education specialists. They concluded that industrial arts in Colorado should be designed to serve roles in career education, general education, and pre-vocational education. Appended materials, comprising half the document, include copies of the teacher, school, supervisor, and State industrial arts association survey instruments; forms used in the communication session; and the conference agenda, lists of participants and discussion group members, and summarized speeches and comments by conference guests. (Author/EC)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

JUN 0 1 1976

ED126290

A STUDY TO INVESTIGATE AND CLARIFY THE ROLE OF INDUSTRIAL ARTS IN COLORADO AND ITS INTERFACE WITH VOCATIONAL EDUCATION

FINAL REPORT

Colorado State University

Fort Collins, Colorado

Volume I, Narrative Report

U.S. DEPARTMENT OF HEALTH EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

CE007310

ABSTRACT

TITLE - A Study to Investigate and Clarify the Role of Industrial Arts in Colorado and Its' Interface with Vocational Education

PURPOSE - The many proposed changes in Industrial Arts in the past decade prompted a thorough investigation into the purpose and role of Industrial Arts in Colorado. Of particular concern was the relationship between Industrial Arts and Vocational Education.

FIELD DATA - Information about Industrial Arts was collected as background information upon which decisions could be made. An extensive review of literature was compiled with the aid of a computer search. Every Industrial Arts, Trade and Industrial and Secondary Technical Education teacher was given the opportunity to contribute their opinions through a mail questionnaire. Information about programs, enrollments and Industrial Arts/Vocational Education relationships were requested from every secondary school in Colorado. The project participated with the Colorado Industrial Arts Association in nine communication sessions throughout the State. As comparative data, information about Industrial Arts was requested from all other States.

CONFERENCE - A three day conference was held to interpret the background data and to propose recommendations for industrial Arts in Colorado. Twenty-five teachers, supervisors, teacher educators, local Vocational Education directors, state department personnel and Career Education specialists attended.

CONCLUSIONS - It was the consensus of the conference participants that Industrial Arts in Colorado should be designed to serve three roles: (1) A role in Career Education (2) A role in General Education and (3) A role in Pre-Vocational Education. These are not given in order of priority and every course need not be designed to meet all roles. Every school should, however, offer opportunities in all three roles.

RECOMMENDATIONS - The following actions were recommended to the State Board for Community Colleges and Occupational Education as a method of implementing effective change.

1. Establish a State Steering Committee for Industrial Arts.

2. Encourage the strengthening of the Pre-Vocational and Career Education roles of Industrial Arts by supporting programs and projects that relate to these roles.

3. Provide state leadership for Industrial Arts in the form of a supervisor within the structure of the State Board for Community Colleges and Occupational Education.

4. Include Industrial Arts in the state plan for Vocational Education.

5. Seek closer working relationship between the Colorado Industrial Arts Association and the Colorado Vocational Association.

6. Organize a consortium of Colorado teachers education institutions to develop a system for including the recommendation of this study in the pre-service preparation of Industrial Arts teachers.

7. Provide extensive inservice for both Industrial Arts and Trade and Industrial/Technical teachers.

FINAL REPORT

A STUDY TO INVESTIGATE AND CLARIFY THE ROLE OF INDUSTRIAL ARTS IN COLORADO AND IT'S INTERFACE WITH VOCATIONAL EDUCATION

(Project Number 0276)

Maurice G. Thomas, Project Director and
Co-Principal Investigator

Rodney E. Anderson, Co-Principal Investigator

Glen D. Rask, Co-Principal Investigator

John Schroeer, Research Associate

Colorado State University
Fort Collins, Colorado

April, 1976

Colorado State Board For Community
Colleges and Occupational Education

TABLE OF CONTENTS

	Page
Introduction	
Statement of the Problem	1
Expected Outcomes	2
Procedure	2
Description of the Project	
Funding	4
Advisory Committee	4
Literature Search	6
Data from Industrial Arts, Trade and Industrial and Technical Teachers	6
Data from Schools	7
Data from States	7
Data from Colorado Industrial Arts Association Area Communication Session	7
Presentation of Data	
Data from Teachers	9
Data from Schools	16
Data from States	18
Data from CIAA Area Communication Session	22
Project Conference	
Conference Participants	26
Conference Program	28
Conclusions and Recommendations	
Role of Industrial Arts	32
Career Education Role	33
General Education Role	33
Pre-vocational Role	33
Relationship between Industrial Arts and Vocational Education	34
Action Plans	35

Appendices

	Page
Appendix A - Questionnaire to Teachers	37
Appendix B - Questionnaire to Schools	42
Appendix C - Questionnaire to State Industrial Arts Supervisors	45
Appendix D - CIAA Communication Session	49
Appendix E - Conference Agenda	54
Appendix F - Conference Participants	58
Appendix G - Conference Discussion Groups	61
Appendix H - Speeches of Conference Guests	63

INTRODUCTION

Industrial Arts, as a curriculum area, has become well-established in the public schools of America and is a subject available to the majority of the youth in Colorado. Industrial Arts has always been characterized by change but this is particularly true of the past decade. The rationale and philosophical basis of the discipline has undergone rigorous investigation. The result has been the development and promotion of numerous innovative curricula. Significant pressure has been applied to change what has become known as the "traditional" program.

The Industrial Arts dilemma has been further compounded by its relationship with Vocational Education. This relationship has never been made clear and recent federal legislation seems only to have confused the issue. The Career Education thrust added still another dimension to the problem. It was appropriate, therefore, that a thorough investigation be conducted into the role of Industrial Arts in the schools of Colorado and its relationship to Vocational Education.

Statement of the Problem

If Industrial Arts is to continue to serve an important function in the education of the youth of Colorado, its role needs to be investigated and clarified. Of particular concern is the relationship of Industrial Arts to Vocational Education.

Expected Outcomes

Through a series of activities associated with the project, the following outcomes were projected:

1. Summary of the literature concerning the role of Industrial Arts and its relationship to Vocational Education.
2. Report of the field data from Industrial Arts teachers.
3. Clarification of the contributions of Industrial Arts.
4. Statement of philosophy concerning Industrial Arts, Career Education and Vocational Education.
5. Guildelines for program planning.

Procedure

The following activities were planned to obtain data for the investigation:

1. Appoint an advisory committee.
2. Review and synthesize current literature.
3. Collect data from the field - Industrial Arts teachers in Colorado were contacted to obtain information important to the investigation. Information sought includes:
   a. What is the current Industrial Arts offering?
   b. What role do Industrial Arts teachers perceive for themselves?
   c. What is the relationship between Industrial Arts and Vocational Education in the various schools in the State?
4. Conduct conference - a conference was planned to bring together approximately 25 representatives of Industrial Arts, Vocational Education and Career Education. Specifically, participants include:
   a. State Department personnel; included state Industrial Arts, Trade and Industrial and Technical Education, and Career Education personnel.

b. Local directors and supervisors; of particular concern are those with Industrial Arts and T & I joint responsibilities.

c. Teacher educators from Colorado universities and colleges.

d. Teachers of Industrial Arts from all levels, sizes of schools and geographic location in the State.

e. Career Education personnel from projects and districts in Colorado.

DESCRIPTION OF THE PROJECT

Included in this section of the report is a description of the various activities conducted for the project. The investigation was a cooperative project between the Departments of Industrial Sciences and Vocational Education at Colorado State University. Dr. Glen Rask from the Department of Vocational Education and Drs. Maurice Thomas and Rodney Anderson from the Department of Industrial Sciences, served as co-principal investigators. Dr. Maurice Thomas was given the major responsibility in directing the project. Mr. John Schroeer served as research associate.

Funding

Funding for the project was obtained through the Research Coordinating Unit of the Colorado State Board for Community Colleges and Occupational Education. The project received assistance from Dr. Richard Edsall who directs the activities of the Research Coordinating Unit. The project was funded for the period of August 1, 1975 through June 30, 1976.

Advisory Committee

One of the first activities of the project was to select a committee of professionals that would assist in giving direction to the project activities. Ten people were selected and served a very valuable function. The following agencies or groups were represented on the Advisory Committee:

1. Colleges and/or universities in the State that prepare Industrial Arts teachers
2. Trade and Industrial Education

3. The State Board for Community Colleges and Occupational Education

4. Career Education

5. Colorado Industrial Arts Association

6. Industrial Arts teachers

7. Industrial Arts supervisors

The following is a list of the members of the Advisory Committee:

William Barnes
Career Education
State Board for Community Colleges and Occupational Education

Bernard Dutton
Department of Industrial Arts
Western State College

John Fisher
President Elect-CIAA
Industrial Arts Instructor
Aspen High School

Robert Hammond, Chairman
Department of Industrial Arts
University of Northern Colorado

Duane Jansen
Trade & Industrial Teacher Educator
Colorado State University

Thomas Manion
Supervisor of Industrial Education
Denver Public Schools

David Parker
School of Professional Studies
Metropolitan State College

Curt Phillips, Director
Industrial Vocational Education
Pueblo School District 60

Gary Ruthven
President-CIAA
Industrial Arts Instructor

Richard Zimpel
T & I Supervisor
State Board for Community Colleges and Occupational Education

The Advisory Committee met on September 26, 1975 and on January 12, 1976. A third and final meeting was held on March 29, 1976.

Their duties were to:

1. Aid in the development of a data gathering instrument to obtain status information from Industrial Arts and Trade and Industrial and Technical Education teachers in Colorado.

2. Assist in planning the major conference.
3. Help in the selection of conference participants.
4. Participate as facilitators in selected conference sessions.
5. Review the draft of the final reports.

Literature Search

It was felt that it would be of value to the project, particularly the conference participants, if a package was assembled that explained the current national thinking on the topic under investigation. This was achieved through a computer search by the Northern Colorado Educational Board of Cooperative Services. (NCEBOCS)

The printout returned included an annotated bibliography of numerous journal articles. These were analyzed and copies were made of the most pertinent entries. These were provided to participants of the Conference as background information. Reprints of the most pertinent information were included in Volume II of this report.

Data from Industrial Arts, Trade and Industrial and Technical Teachers

Colorado has been without a state supervisor of Industrial Arts for four years. As a result, there exists little up-to-date information about Industrial Arts programs in the State. It was decided that such information would be very valuable to such an investigation. The opinion of teachers concerning the role of Industrial Arts and its relationship to Vocational Education was also deemed germane to the study.

In early December, approximately 1,500 questionnaires were mailed to all Industrial Arts teachers, all Trade and Industrial Education teachers and all secondary Technical Education teachers in Colorado. Approximately

1,000 forms went to Industrial Arts teachers and 500 forms to Trade and Industrial and Technical teachers. It was realized that some teachers were included on both Industrial Arts and the T & I lists and consequently received two copies of the questionnaire. No attempt was made to eliminate this duplication.

As of February 1, 1976, 442 questionnaires were returned for approximately a 30% return. During February and March, twenty-five additional forms were received but were not included in the tabulation.

Data from Schools

In addition to information sought from teachers, information about programs was gathered. A separate questionnaire dealing with such things as courses, enrollments, and organizational structures was sent to every secondary school in Colorado. Approximately 300 such forms were mailed, and 106 were returned for approximately a 35% return. Eight late returns were received but were not included.

Data from States

The status of Industrial Arts in the other states was also sought. A questionnaire was prepared and mailed to all state supervisors of Industrial Arts. Thirty-nine completed and returned the forms.

Data from Colorado Industrial Arts Association Area Communication Sessions

During the months of November and December, the Colorado Industrial Arts Association hosted nine area communication sessions throughout the

State.* These sessions had a two-fold purpose: first, to provide information to area Industrial Arts teachers; second, to give the teachers an opportunity to have input to this project.

The session host began by providing information about current happenings in Industrial Arts. This was followed by a technical demonstration of interest to Industrial Arts teachers. CSU project personnel were then invited to ask teachers to comment on eight topics, and write their feelings about these topics on an informal questionnaire form.

The following list identify the area locations and the personnel that hosted the communication sessions:

Denver East - Dave Parker
Denver West - Gary Ruthven
Longmont - Rodney Anderson, James Parnell
Greeley - Wendell Roy
Alamosa - Clarence Svendsen
Mancos - Clarence Svendsen
Grand Junction - Bernard Dutton
Pueblo - Curt Phillips
Ft. Morgan - Robert Hammond
*Colorado Springs - not held

All meetings were coordinated by CIAA President Gary Ruthven.

---

*A tenth session was planned for Colorado Springs, but a teacher strike made it impossible to hold that session.

PRESENTATION OF FIELD DATA

Included in this section of the report is a presentation of the data received through the various questionnaires that were used.

Data from Teachers

Teachers were asked if they considered themselves Industrial Arts teachers, Vocational Education* teachers, or if they considered themselves both Industrial Arts and Vocational Education teachers. The returning questionnaires were therefore divided into these groups.

Group A - Industrial Arts teachers

Group B - Vocational Education teachers

Group C - both Industrial Arts and Vocational Education teachers

The data from the questionnaires are therefore reported in these categories. Of the 442 returns, 231 (52%) were Industrial Arts teachers, 103 (23%) were Vocational Education teachers and 108 (25%) said they were both.

The returns were roughly divided between rural and urban. Two hundred eight-one (64%) were from urban areas of the State, while 161 (36%) were from rural areas.

The respondents were asked about their academic preparation. Table 1 summarizes this information.

---

*In this study, Vocational Education includes Trade and Industrial Education and Technical Education.

TABLE 1

Academic Preparation of Industrial Arts and Vocational Education Teachers in Colorado

DEGREE	Group A (IA)	Group B (VE)	Group C (BOTH)
None	0%	36%	3%
Associate Degree	0%	6%	1%
Bachelor's Degree	47%	28%	45%
Master's Degree	45%	30%	47%
Doctoral Degree	8%	0%	4%
Number responding	231	103	108

Two hundred and nine (90%) of Group A (IA) earned their highest degree at a Colorado institution. Sixty (88%) of the Vocational Education teachers (Group B) who hold degrees, earned them in the State and 84 (81%) of Group C (both) category hold Colorado degrees.

The respondents were asked about their trade or industrial experience. Table 2 shows the average months of industrial experience for each group.

TABLE 2

Industrial Experience of Teachers

MONTHS OF EXPERIENCE	0	1-24	25-48	49-72	73-96	97-120	121-144	145-168	169-192	193-216	217-240	240 +	Number Responding
Group A (IA)	17%	30%	22%	14%	5%	5%	2%	2%	1%	0%	0%	2%	231
Group B (VE)	0%	6%	12%	11%	8%	11%	6%	5%	7%	7%	5%	22%	103
Group C (Both)	1%	13%	16%	21%	19%	9%	3%	4%	3%	3%	0%	8%	108

The certificate and/or credential under which the teachers work was considered important. Table 3 summarizes this information.

TABLE 3

Types of Certificates/Credentials Held by Teachers

TYPE OF CERTIFICATE	Group A (IA)	Group B (VE)	Group C (Both)
Colorado Secondary School Certificate	97%	58%	88%
Colorado Vocational Credential	6%	100%	75%

Study participants were asked to indicate the curriculum areas that they taught. The most frequently taught areas in Industrial Arts were; woodworking, general shop, drafting, metals, crafts, IACP, electronics, auto, plastics and graphic arts. The study found that the most frequently taught areas in Vocational Education were; automotive, electronics, welding, building trades, machine trades, graphic arts and drafting. (Previous lists are given in descending frequency)

The need for in-service work to strengthen teachers instructional skills was one of the topics under investigation. One hundred fifty-five (67%) of the Industrial Arts teachers (Group A) responding, indicated they felt a need for in-service, sixty-four (62%) of the Vocational Education teachers (Group B) expressed such a need and seventy-six (71%) of the teachers wanted in-service who consider themselves both Industrial Arts and Vocational Education (Group C).

The area of supervision was dealt with in some length on the inquiry form. First the respondents were asked if local supervision was provided for Industrial Arts. Table 4 summarizes the responses.

TABLE 4

Local Supervision for Industrial Arts as Viewed by IA Teachers

GROUP RESPONDING	Receiving Supervision	Not Receiving Supervision	DON'T KNOW	Number Responding
Group A (IA)	71%	25%	4%	231
Group C (Both)	71%	22%	7%	108

The source of supervision for Industrial Arts was also sought. Table 5 shows who was responsible for supervising Industrial Arts programs.

TABLE 5

Sources of Local Supervision for Industrial Arts as Viewed by Industrial Arts Teachers

	Group A (IA)	Group C (Both)
Local IA Supervisor	46%	41%
Local Director of VE	24%	2%
Principal	4%	8%
Department Head	16%	49%
Number Responding	231	108

One of the major objectives of the study was to determine the purposes of Industrial Arts as viewed by teachers. Table 6 identifies nine possible purposes. Respondents were asked to indicate the level of emphasis that should be placed on each.

TABLE 6

Purposes of Industrial Arts as Viewed by Industrial Arts and Vocational Education Teachers

PURPOSES OF INDUSTRIAL ARTS	Group A (IA)	Group B (VE)	Group C (Both)
To develop an understanding of our technical culture	2.3	2.3	2.4
To discover and develop creative technical talents	2.4	2.5	2.6
To develop an understanding of the application of science and math	2.5	2.4	2.3
To develop in students a measure of skill in the use of common tools and machines	2.8	2.7	2.3
To provide pre-vocational exploratory experiences to students interested in technical work	2.4	2.7	2.8
To teach a trade or skill to interested students	1.8	2.3	2.1
To develop worthy leisure time interests	2.4	1.8	2.2
To develop consumer knowledge and appreciation and use of industrial products	2.5	2.1	2.5
To assist students in making meaningful career choices	2.4	2.7	2.7

*Scale: High Emphasis 3
Medium Emphasis 2
Low Emphasis 1

The questionnaire also sought information about the effectiveness of Industrial Arts as pre-vocational experience as viewed by teachers. This information is provided in Table 7. Each area was ranked on a five (5) point scale with 5 being most effective and 1 being ineffective.

TABLE 7

The Effectiveness of Industrial Arts in Providing Pre-Vocational Experiences as Viewed by Teachers

	Group A (IA)	Group B (VE)	Group C (Both)
Career Awareness	3.4	2.8	3.3
Exploratory Experiences	4.2	3.0	3.1
Basic Technical Skills	3.9	3.6	3.6
Assistance in Career Selection	3.2	2.7	3.2
Knowledge of Technical Subject Matter	3.2	2.8	3.2
Employment Opportunities	2.8	2.4	2.6
Occupational Working Conditions	2.7	2.5	2.8
Salaries and Wages	2.4	2.4	2.6
Advancement Possibilities	2.5	2.6	2.6

Data from Schools

In addition to the information collected from teachers, a survey instrument was also sent to each secondary school in Colorado. The survey was included with the teachers information form, and instructions were given to the recipient to forward the school information survey to the department head, or person in charge.

An effort was made to determine how much dual usage of shop facilities there was in the State. Table 8 indicates that a significant number of auto shops, welding shops, and general shops serve both Industrial Arts and Vocational Education, while few wood, metal, drafting, crafts, and plastics labs were used in common.

TABLE 8

Facility Utilization in Industrial Arts and Vocational Education

SHOP/LAB	Number of facilities used by: IA	VOC. ED.	BOTH
Auto	16	5	8
Metal	44	2	4
Welding	2	2	2
Wood	62	1	7
Electronics	15	3	2
Gen. Shop	24	1	6
Drafting	47	2	2
Crafts	23	0	1
WOC/WOM/EPIC	7	1	2
Ag	0	5	1
Plastics	10	5	1

Number of Schools Responding - 106

Schools were also asked to indicate any changes in enrollment trends in the Industrial Arts and Vocational Education classes, the following responses were received, indicating a definite trend toward increased enrollment.

In sixty-three of the 106 schools responding (59%), enrollment in Industrial Arts was reported as increasing. Only seven (6%) reported decreasing enrollment in Industrial Arts and 36 (34%) indicated no change in enrollment patterns.

Of the 106 schools responding, thirty-five reported that Vocational Education programs were also offered in their schools. Of these thirty-five, twenty (57%) reported increasing enrollments in Vocational Education and eleven (31%) indicated no enrollment change.

When they were asked if enrollment patterns in Industrial Arts were affected by enrollment patterns in Vocational Education, 76% indicated that they did not effect each other. Slightly over half of the responding schools have Industrial Arts and Vocational Education in the same department organization.

When asked if any state or federal funds supported their program, only 4% answered yes, 86% said no, and 9% did not know.

To better understand who is responsible for placing students in Industrial Arts programs, five areas were identified as significant; counselors and parents were the most influential, principals, teachers, and advisors were slightly less influential.

Data from Other States

The following summarizes the data received from the state supervisors of Industrial Arts in the various states. Questionnaires were mailed to all states except Colorado and returns were received from thirty-nine. State supervisors for Industrial Arts exist under a variety of titles but only two states, in addition to Colorado, reported that no such position

existed. Approximately half of the state supervisors function without assistants but two states reported that they have five assistants.

The majority of the states have organized Industrial Arts as part of Vocational Education. Only seven reported that Industrial Arts is separate from Vocational Education in their organizational plan.

All but three states responding have Industrial Arts written into their state plan for Vocational Education and thirty-one of these states are receiving some funds through the 1972 amendments.

The working relationship between Industrial Arts and Vocational Education differs greatly from state to state.

TABLE 9

Industrial Arts in Other States

No.	STATE	SUPERVISOR FOR IND. ARTS YES	SUPERVISOR FOR IND. ARTS NO	NUMBER OF ASSISTANTS	I.S. - I.A. UNDER GEN. ED.	I.S. - I.A. UNDER VOC. ED.	WORKING RELATIONSHIP W/ V.E. VALUED JUDGEMENT FROM WRITTEN STATEMENT	I.A. INCLUDED IN STATE PLAN?	RECEIVING FUNDS?
1	Alaska	X		0		X	Good	Yes	Yes
2	Arizona	X		0		X	Excel.	Yes	Yes
3	California	X		-		X	Good	Yes	Yes
4	Connecticut	X		0	X		Fair	Yes	No
5	Delaware	X		0		X	Excel.	Yes	Yes
6	Florida	X		5		X	Good	Yes	Yes
7	Georgia	X		1		X	Good	Yes	Yes
8	Hawaii	X		0		X	Good	No	
9	Idaho	X		1		X	Fair	Yes	Yes
10	Illinois	X		3		X	Good	Yes	Yes
11	Indiana	X		2		X	Fair	Yes	No
12	Iowa	X		3	X		Good	Yes	Yes
13	Kansas		X	-		X	Good	Yes	Yes
14	Kentucky	X		2		X	Good	Yes	No
15	Louisiana	X		0	X		Poor	Yes	Yes
16	Maine	X		0	X		Good	Yes	Yes
17	Maryland	X		1/3		X	Good	Yes	Yes
18	Mississippi	X		1		X	Good	Yes	Yes
19	Missouri	X		0		X	Excel.	Yes	Yes
20	Nebraska		X			X	Excel.	Yes	No
21	Nevada	X		0		X	Fair	Yes	Yes

Table 9 continued

No.	STATE	SUPERVISOR FOR IND. ARTS YES	SUPERVISOR FOR IND. ARTS NO	NUMBER OF ASSISTANTS	I.S. I.A. UNDER GEN. ED.	I.S. I.A. UNDER VOC. ED.	WORKING RELATIONSHIP W/ V.E. VALUED JUDGEMENT FROM WRITTEN STATEMENT	I.A. INCLUDED IN STATE PLAN?	RECEIVING FUNDS?
22	New Hampshire	X		1/2		X	Good	Yes	Yes
23	New Jersey	X		2		X	Good	Yes	No
24	New Mexico	X		1		X	Good	Yes	Yes
25	New York	X		5		X	Diff. to define	Yes	No
26	No. Carolina	X		0		X	Excel.	Yes	Yes
27	No. Dakota	X		0		X	Excel.	Yes	Yes
28	Ohio	X		1	X	X	Excel.	Yes	Yes
29	Oklahoma	X		0		X	Good	Yes	Yes
30	Oregon	X		0		X	Good	Yes	Yes
31	Pennsylvania	X		1		X	Good	Yes	No
32	Puerto Rico	X		1	X		Poor	Yes	No
33	Tennessee	X		3		X	Good	Yes	Yes
34	Texas	X		2		X	Poor	Yes	Yes
35	Utah	X		0		X	Excel.	No	Yes
36	Virginia	X		3		X	Good	Yes	Yes
37	Washington	X		0		X	Poor	Yes	Yes
38	W. Virginia	X		0	X		Poor	No	
39	Wyoming	X		0		X	Good	Yes	Yes

Data from Colorado Industrial Arts Association Area Communication Sessions

The following summarizes the major points coming from the CIAA Area Communication Sessions. The intent of these sessions was to encourage informal dialogue and to record the status of Industrial Arts as the teachers perceived it. The questions, with typical answers, are provided below.

1. What aspects of your programs are improving and show promise?

   a. A few teachers indicated that they have good results with IACP.
   b. Some jewelry classes have improved programs.
   c. A very few teachers indicate better cooperation with school board.
   d. A large number of teachers indicate female enrollment is up.
   e. Several schools have increased student enrollment in I.A.
   f. OSHA is helping teachers get some necessary safety equipment.
   g. Career education is a contributing factor in I.A.
   h. Some teachers feel as though students are of a better quality.
   i. A few teachers say that their classes are no longer "dumping grounds".

2. What are the major problems facing Industrial Arts in your area?

   a. Nearly all teachers complained about budget cuts, tight money, or lack of funding for programs and material.

   b. A few teachers still feel as though they are "dumping grounds" for poor students.

   c. Nearly all teachers feel as though better supervision on the state level is necessary.

   d. Excessive enrollment, shortage of faculty, poor facilities, poor curriculum, and overloading of teachers were mentioned by almost all responding teachers as being critical problems.

3. What do you see in the future for Industrial Arts? (female enrollment, funding, work experience, etc.)

   Most teachers feel as though higher female enrollment, lower overall enrollment, and Career Education will generally improve their programs, however, this improvement will not take place without better funding and supervision on the state level.

4. What is the impact of Career Education on Industrial Arts in your areas?

   Career Education has a mixed impact in Colorado. Most areas that are involved feel as though it is helping the program. Inservice is still needed in the areas of implementation and curriculum. Some of the teachers had very little knowledge of Career Education.

5. What are your needs in Industrial Arts? (inservice, supervision, additional funding, etc.)

   Teachers overwhelmingly indicated the need for supervision and funding to make I.A. programs what they should be.

   Several indicated a need for both professional and technical inservice.

6. What is the relationship of Industrial Arts and Vocational Education in your school or district?

   Feelings were mixed, however a substantial number of programs are being taught as feeder programs for Vocational Education programs. Several I.A. programs operated with local Vocational Education directors as their supervisors.

7. To what extent does your Industrial Arts program serve a pre-vocational function?

   In general, both I.A. and T & I teachers feel that without Industrial Arts as a feeder program, Vocational programs would either have little enrollment, or classes would be overcrowded due to the high number of students using them as exploratory programs.

8. What do you think should go into a pre-vocational program?

   The most commonly stated feeling in this area, is that I.A. already is pre-vocational in that it is primarily exploratory in nature, and a good pre-vocational program is exploration oriented.

In addition to the summaries of the discussion questions the officers of CIAA distributed a questionnaire. This form is included with the responses indicated.

This response form is designed to delve briefly into attitudes, feelings, and opinions relating to the Industrial Education program offered in your school. It is believed that this approach, coupled with the CIAA communication sessions, may reveal some trends, tendencies, new problems, etc., which otherwise might go undetected by the profession. Please respond in the best way possible to reflect an overall school-community feeling, rather than your personal feelings for your school building.

1. What is the overall school teaching staff attitude about the value of offering students Industrial Arts courses in your school? MEAN

   Very valuable 12 Valuable 29 Undecided 2 Limited value 4
   No value 0 4.0

2. What is the attitude of the overall school teaching staff related to the broad Career Education concept?

   Very positive 5 Positive 21 Undecided 8 Poorly informed 12
   Negative 0 3.4

3. What is the attitude of your parent community related to the broad Career Education concept?

   Very positive 7 Positive 18 Undecided 9 Poorly informed 13
   Negative 0 3.4

4. What is the attitude of the overall school teaching staff relative to the value of offering students Industrial Vocational (T & I) offerings in your school (if applicable)?

   Very positive 2 Positive 22 Undecided 10 Poorly informed 8
   Negative 1 3.1

5. What is the attitude of your parent community relative to the value of offering students Industrial Vocational (T & I) courses in your school (if applicable)?

   Very positive 3 Positive 19 Undecided 12 Poorly informed 8
   Negative 1 3.1

Response Form (continued)

6. Is your school administrative staff (superintendent or principal and others):

   A. Strongly supportive of existing Industrial Arts offerings? Yes 15 No 3

   B. Mildly supportive or neutral toward Industrial Arts? Yes 5 No 6

   C. Questioning what to do with and about Industrial Arts? Yes 3 No 9

   D. Asking what changes Industrial Arts will be making in the future? Yes 12 No 2

7. Do you feel that your principal and his administrative staff members understand the differences between Industrial Arts, Vocational Education, Career Education, and Industrial Education?

   Yes 4 Somewhat 9 Undecided 1 Very limited 1 No 2 3.7

PROJECT CONFERENCE

One of the major activities of the project was a conference that was held on February 23, 24, and 25, 1976, in Denver at the Continental Denver Hotel. The purpose of the conference was to bring together leaders in Industrial Arts, Trade and Industrial Education, Technical Education and Career Education to perform the final work in clarifying the role of Industrial Arts in Colorado and explaining what the interface should be between Industrial Arts and Vocational Education.

Conference Participants

The participants for the conference were selected by the project staff and advisory committee. Every attempt was made to obtain a broad representation of groups concerned with Industrial Arts in Colorado. This included teachers, teacher educators, supervisors, state department personnel, and local directors of Vocational Education. In addition, every effort was made to have the various geographical sections of the State represented.

Below is a list of the conference participants.

Gayle Culbertson
Industrial Arts Instructor
Karval

Bernard Dutton
Industrial Arts Teacher Educator
Western State College

John Fisher
President Elect, CIAA
Industrial Arts Instructor
Aspen High

Al Gofredi
Mesa College Vocational Director
Grand Junction

Robert Hammond
Industrial Arts Teacher Educator
University of Northern Colorado

B.D. Hayes, Head
Department of Industrial Sciences
Colorado State University
Fort Collins

Ken Henderson
Industrial Arts Instructor
Green Mountain High School
Lakewood

Duane Jansen
Trade and Industrial Teacher Educator
Colorado State University

Bernel Johnson
Supervisor of Tech. Ed.
State Board for Community Colleges and Occupational Education

Byron Lewis
Local Director of Vocational Ed.
Aspen

Thomas Manion
Supervisor of Industrial Ed.
Denver Public Schools

Bill Newblom
Technical Arts Supervisor
Jefferson County Schools

David Parker
Industrial Arts Teacher Educator
Metropolitan State College

Curt Phillips
Director Industrial-Vocational Ed.
Pueblo District 60

Dean Reimer
Industrial Arts Instructor
Rocky Mountain High School
District Supervisor
Fort Collins

Al Renzelman
Career Ed. Coordinator
North East Colorado B.O.C.S.

Wendell Roy
Industrial Arts Teacher Educator
University of Northern Colorado

Gary Ruthven
President, CIAA
Industrial Arts Instructor
Belmont Jr. High, Lakewood

Terry Sapp
Industrial Arts Instructor
Doherty High School
Colorado Springs

Charles Tedrow
Industrial Arts Teacher Educator
University of Southern Colorado

Carmen R. Timiraos
Adult Education Consultant
Colorado Department of Education

Lloyd Torres
Industrial Arts Instructor
Merrill Junior High
Denver

George Trani
Industrial Arts Instructor
Doherty High School
Colorado Springs

L.D. Wallace
Industrial Arts Instructor
Del Norte

Jean Werschke
Career Coordinator
Colorado Department of Education

Richard Zimpel
Supervisor, T & I, State Board for Community Colleges and Occupational Education

In addition to the above participants, the following project staff were in attendance.

Rodney Anderson
Industrial Sciences Department
Colorado State University

Glen Rask
Vocational Education Department
Colorado State University

John Schroeer
Industrial Sciences Department
Colorado State University

Maurice Thomas
Industrial Sciences Department
Colorado State University

Conference Program

The conference was planned within three broad headings:

1. Where Are We?
2. Where Are We Going?
3. How Do We Get There?

A number of presentations and discussions were conducted under each heading. A detailed agenda is available in Appendix E.

The first session was a dinner meeting on Monday, February 23. The first presentation on the dinner program was a review of Industrial Arts contributions and objectives. This was presented by Bernard Dutton and got the group thinking about the broad implications of Industrial Arts programs. A film was then shown to further emphasize the place of Industrial Arts in American education. The title of the film was Learning For Living in a Technological World and was produced for the American Industrial Arts Association. Tom Manion and Wendel Roy then made a presentation

identifying the critical issues facing Industrial Arts in Colorado and across the nation. This directed the attention of the group to many of the current areas of concern.

It had previously been decided by the project staff and advisory committee that any serious planning for Industrial Arts must be done with knowledge and direction of the Commissioner of the Colorado Department of Education and the Director of the State Board for Community Colleges and Occupational Education. Dr. Calvin M. Frazier and Dr. William D. Woolf were therefore invited to attend and to speak in behalf of their respective agencies. Four questions were posed to them as a guide for their remarks. These questions were:

1. What short and/or long range plans has your agency made, that has implications for Industrial Arts?
2. What should the emphasis or commitment be in Industrial Arts?
3. What changes would you suggest be made in Industrial Arts programs to continue to make a contribution to the education of the youth of Colorado?
4. What is and/or should be, the relation between Industrial Arts and Vocational Education in Colorado?

Transcripts of the presentations of Dr. Frazier and Dr. Woolf are included in Appendix H.

The first session on Tuesday morning continued the "Where Are We?" theme. It consisted of a presentation by the project staff in which the research data from the field were presented. The conference participants were given an opportunity to discuss and propose implications from the data.

Following a presentation of the data it was felt that the participants were ready to start formulating some opinion concerning the theme "Where Are We Going?". The participants were divided into discussion groups and one hour was spent in informal discussion of the philosophy of Industrial Arts and the Industrial Arts/Vocational Education relationships. No specific outcomes were expected. This session was to allow all participants to ask questions and to contribute ideas. The make up of the discussion groups are listed in Appendix G.

At this point in the conference the participants heard presentations from two out-of-state consultants. Mr. Joe L. Luke spoke on the role and relationship of Industrial Arts and Vocational Education in Utah. Mr. Luke serves as Industrial Arts Specialist in his state. Mr. Harold Winburn, State Industrial Arts Supervisor in Oklahoma, outlined the role and relationship of Industrial Arts in Oklahoma. The purposes of these presentations were to (1) explain how other states have organized and solved some of the Industrial Arts/Vocational Education problems, (2) make recommendations to Colorado. Summaries of these presentations are included in Appendix H.

The remaining sessions centered in on the theme "How Do We Get There?". The participants were once again divided into the discussion groups. The same groups were maintained. The groups were asked to:

1. Review and discuss
    A. The objectives of Industrial Arts presentation
    B. The critical issues presentation
    C. The data from the field
    D. The information from the CIAA Communication Sessions

E. The directions from Dr. Frazier and Dr. Woolf

F. The suggestions from Mr. Luke and Mr. Winburn

2. Prepare a document that

A. Defined the role of Industrial Arts in Colorado

B. Suggested what the relationships should be between Industrial Arts and Vocational Education

C. State recommendations for achieving "A" and "B"

Each group accepted the assignment and concluded their work with a report as requested.

During the evening the reports were typed and duplicated. In addition, oral reports from the group leaders were given following dinner on Tuesday.

The group was assembled for the final session at 8:30 a.m. Wednesday. Each participant was given a copy of all four of the group reports. They were once again directed into discussion groups to re-evaluate their recommendations in light of the other group reports.

The participants were called back together and discussion continued until a consensus was achieved on the following:

A. The role of Industrial Arts in Colorado

B. The relationship between Industrial Arts and Vocational Education

C. Recommendations for achieving "A" and "B"

CONCLUSIONS AND RECOMMENDATIONS

The following are the conclusions and recommendations of the conference participants. They are a refinement of many proposed at the conference and are based on the expertise of the participants and the information and data provided at the conference.

Role of Industrial Arts

Industrial Arts is a component of the total program of education from kindergarten through adult education. It is the study of industry and technology. Such study provides unique opportunities for students to participate in representative experiences in the production of goods or the rendering of services through the effective use of people, methods, machines, money, management and marketing. Students examine effects of industrial technology on all elements of society and the environment in order to provide for industrial-technological understanding, application and conservation.

The prime focus is on student "hands on" experiences which are relevant, meaningful and consistent with the identifiable needs of an individual as he/she functions within our technological society.

Industrial Arts in Colorado should serve three roles: (1) a role in Career Education, (2) a role in General Education and (3) a role in Pre-Vocational Education.*

---

*These are not given in order of priority. Every course need not be designed to meet all three roles.

Career Education Role-

Industrial Arts should provide students with information about the world of work and occupational opportunities in industry. It should incorporate industrial experiences, both vicarious and "hands on". This type of education develops career awareness and provides experiences in career exploration. Furthermore it prepares people for enrollment in professional and highly skilled Vocational and Technical Education programs. Industrial Arts is perceived as providing these Career Education experiences within the socio-economic clusters of construction, manufacturing, communication and transportation.

General Education Role-

Students should be assisted in the discovery and development of personal creative technical problem solving abilities, aptitudes, interests, self reliance, judiciousness, resourcefulness and adaptability. These qualities respond to the students' personal needs for living, coping and functioning successfully in a technological society. Help should be given to students in making decisions relative to practical, everyday living needs. Such things as consumer economics, leisure time utilization, assistance in career choices, application and reinforcement of basic academic skills should be stressed.

Pre-Vocational Role-

The similarities of the subject matter and the nature of the learning activities, place Industrial Arts in a key position to contribute to the effectiveness of Vocational Education. Industrial Arts can assist individuals in making informed and meaningful occupational choices in industry

and technology by (A) Providing occupational information and instruction pertaining to a broad range of occupations, including training requisites, working conditions, salaries or wages, and other relevant information, (B) Providing exploratory experiences in shops and laboratories, and observations in business and industry to acquaint students with jobs, (C) Providing quidance and counseling for students faced with making occupational choices, (D) Preparing individuals for enrollment in advanced or highly skilled Vocational Education programs.

Relationships Between Industrial Arts and Vocational Education

There is a continuing need for better understanding between the two similar, yet unlike, segments of our educational program--Industrial Arts and Vocational Education. The role of Industrial Arts is not an either/or situation. It is not a question of being either General Education or Vocational Education. It is a question of meeting needs of individuals in a complex industrial-technical society.

Industrial Arts is unique as an educational program with defined functions and responsibilities in both General Education and Vocational Education. This uniqueness puts Industrial Arts in the position of being able to bridge the gap between General Education and those parts of Vocational Education known as Trade and Industrial and Technical Education.

As a part of General Education, Industrial Arts has the obligation to provide programs that: (A) Offer something for all students; (B) Assist in the discovery and development of personal aptitudes, interest, creative technical problem-solving abilities, self-reliance, sound judgements, and

resourcefulness; (C) Train for the general skills of living in a technical society, and; (D) Develop the ability to regulate and control change.

Relating to Vocational Education, Industrial Arts has the responsibility for providing programs that: (A) Assist individuals in making informed and meaningful occupational choices in industry and technology; (B) Provide occupational information and exploratory experiences pertaining to a broad range of occupations including training requisites, working conditions, salaries or wages and other relevant information, and; (C) Prepare individuals for enrollment in Vocational and Technical Education programs.

These responsibilities are compatible and can best be served through implementation at all levels of our education system. Industrial Arts and Trade and Industrial and Technical Education must identify their specific roles in the total education system so that articulated programs can focus on the common goal of providing the best education for students.

Action Plans

The following actions are recommended to the State Board for Community Colleges and Occupational Education as a method of implementing effective change.

1. Establish a State Steering Committee for Industrial Arts. Included on this committee would be Industrial Arts educators, Vocational educators, people from business and industry, school administrators and parents. The function of this group would be to give directions to Industrial Arts, particularly as they relate to the findings of this study.

2. Encourage the strengthening of the Pre-Vocational and Career Education roles of Industrial Arts by supporting programs and projects that relate to these roles.

3. Provide state leadership for Industrial Arts in the form of a supervisor within the structure of the State Board for Community Colleges and Occupational Education.

4. Include Industrial Arts in the state plan for Vocational Education.

5. Seek closer working relationship between the Colorado Industrial Arts Association and the Colorado Vocational Association with an objective of possible joint activities. As an initial step, a liason committee of the officers of CIAA and the Trade and Industrial and Technical groups of the CVA should be established and begin communication on common goals and problems.

6. Organize a consortium of Colorado teachers education institutions to develop a system for including the recommendation of this study in the pre-service preparation of Industrial Arts teachers.

7. Provide extensive inservice for both Industrial Arts and Trade and Industrial/Technical teachers to better achieve the purposes of this segment of the educational program. They should be offered for college credit, acceptable for state re-certification and be easily accessible.

8. Encourage Industrial Arts students to participate in the youth club programs to develop interest, and an opportunity for leadership.

APPENDIX A

QUESTIONNAIRE TO TEACHERS

Department of Industrial Sciences

Colorado State University
Fort Collins, Colorado
80523

December 1, 1975

Dear Colleague,

Events on the national scene have prompted many industrial educators to ask questions related to the direction of Industrial Arts in Colorado. The Departments of Industrial Sciences and Vocational Education at Colorado State University are cooperating to investigate and clarify the role of Industrial Arts in the state and its interface with Vocational Education.

Your input is very important to this study and greatly appreciated. Please complete the enclosed information survey and return it at your earliest convenience.

Thanking you in advance,

Yours truly,

Maurice G. Thomas
Project Co-director

Glen D. Rask
Project Co-director

MGT:lk

Enc.

TEACHER INFORMATION SURVEY

1. Name of school. _____

2. City/Town. _____

3. Check (✓) the highest educational degree which you have earned and indicate granting institution and major.

	Degree	Institution	Major
___	No degree.	_____	_____
___	Associate degree.	_____	_____
___	Bachelor's degree.	_____	_____
___	Master's degree.	_____	_____
___	Doctoral degree.	_____	_____
___	Other	_____	_____

4. How many months of industrial or trade experience do you have? _____

5. How many years of teaching experience do you have? Total _____
   In Colorado _____

6. Which of the following do you hold?
   Colorado Secondary School Certificate _____
   Colorado Vocational Credential _____
   Other (specify) _____

7. What grades do you teach? (circle) Elementary, 6, 7, 8, 9, 10, 11, 12

8. Do you consider yourself an Industrial Arts teacher? _____
   Vocational Education* teacher _____ both _____ neither _____
   (*in this study vocational education includes T & I and Technical Education)

9. What is your teaching load?

Course Title	IA	T & I	Grade Level	Approximate Enrollment

10. What non-teaching duties do you have?

_____

_____

_____

_____

11. Do you feel a personal need for inservice work to strengthen your teaching skill? yes _____ no _____
If yes, in what areas? _____

_____

_____

_____

12. Is there supervision for Industrial Arts in your district?
yes _____ no _____ don't know _____

13. If the answer to 12 is yes, is your supervisor also: a local director of Vocational Education ____ Principal _____ Department Head _____.

14. In your opinion, what degree of emphasis should be placed on the following purposes of Industrial Arts in your school? ("✓" one for each purpose)

Emphasis			
High	Medium	Low	Purposes of Industrial Arts
			To develop an understanding of our technical culture
			To discover and develop creative technical talents
			To develop an understanding of the application of science and math.
			To develop in students a measure of skill in the use of common tools and machines
			To provide pre-vocational exploratory experiences to students interested in technical work.
			To teach a trade or skill to interested students
			To develop worthy leisure time interests
			To develop consumer knowledge and appreciation and use of industrial products
			To assist students in making meaningful career choices

15. How effective do you feel industrial arts programs are at providing pre-vocational instruction in the following areas:

	Effective 5	4	3	2	1 Ineffective
Career awareness					
Exploratory experiences					
Basic technical skills					
Assistance in career selection					
Knowledge of technical subject matter					
Employment opportunities					
Occupational working conditions					
Salaries and wages					
Advancement possibilities					

16. If you have time, additional comments on this topic would be greatly appreciated.

APPENDIX B

QUESTIONNAIRE TO SCHOOLS

SCHOOL INFORMATION SURVEY

Instructions:

In addition to information from teachers, school data is also needed. We think that this information could best be provided by the department head. If you are not the department head please direct this survey to him/her. If your school has no department head would you please provide the requested information.

1. Please list the courses that are offered at your school in Industrial Arts and Vocational Education.* (attach prepared list if you wish)
   (*In this study Vocational Education includes T&I and Technical Education)

COURSE TITLE	INDUSTRIAL ARTS	VOCATIONAL EDUCATION	APPROX. ENROLLMENT

2. Please identify the shops/labs in your school and indicate if they are used for Industrial Arts, Vocational Education or both.

Shop/Lab	IA	VOC.	BOTH

Shop/Lab	IA	VOC.	BOTH

3. What is the trend in enrollment in Industrial Arts and Vocational Education in your school?

	IA	Voc. Educ.
increasing	_____	_____
decreasing	_____	_____
no change	_____	_____

4. Would you judge that the enrollment patterns in Industrial Arts are affected by the enrollment patterns in Vocational Education?

yes _____ no _____

If yes, in what way? _____

_____

_____

_____

_____

5. Is Industrial Arts and Vocational Education in the same departmental organization in your school? yes _____ no _____

6. To the best of your knowledge, are State or Federal Vocational funds supporting any industrial arts programs at your school?
yes _____ no _____ don't know _____

If yes, what kinds of support are provided? _____

_____

7. Who is responsible for placing students in a program?
counselor _____ teacher _____ principal _____ advisor _____
student/parents _____ other (specify) _____

_____

APPENDIX C

QUESTIONNAIRE TO STATE INDUSTRIAL
ARTS SUPERVISORS

Department of Industrial Sciences

Colorado State University
Fort Collins, Colorado
80523

November 15, 1975

Dear Supervisor:

Many of you have provided me with help when I was the Colorado Industrial Arts Consultant. I need your help again. We are gaining momentum toward the day when Colorado will again have a state supervisor for Industrial Arts. In July of 1975, Colorado State University was funded by the State Board for Community Colleges and Occupational Education to investigate the relationship between Industrial Arts and Vocational Education.

Dr. Maurice Thomas of our department and Dr. Glen Rask of the Vocational Education Department are directing this investigation.

The plan of action is to utilize an Advisory Committee to act as a sounding board. The project will survey three audiences (supervisors, teachers and department heads) to get their input. Also, five regional conferences are scheduled by the Colorado Industrial Arts Association to get further input.

A work session will be held in February to finalize the information gathered.

Colorado is again on the move, please help us by returning the questionnaire. If you have additional materials that would assist us, please send.

Sincerely,

Rodney E. Anderson, Coordinator
Industrial Arts
Industrial Sciences Department
Colorado State University
Fort Collins, CO 80523

REA:jc

Information Form

1. State _____

2. Is there a person/persons at the state level who is/are responsible for the supervision of Industrial Arts programs? yes _____ no _____

3. If the answer to the above is 'yes' what is his/her title?

_____

4. How many assistants does this person have? _____

5. Please briefly describe or chart your state's organization for education and identify where Industrial Arts, Trade and Industrial and Technical Education fit into this organization.

6. Briefly describe the working relationship between Industrial Arts and Trade and Industrial Education in your state.

7. What degree of emphasis is placed on the following purposes of Industrial Arts in your state? ("✓" one for each purpose)

High	Medium	Low	Purposes of Industrial Arts
			To develop an understanding of our technical culture.
			To discover and to develop creative technical talents in students.
			To develop an understanding of the application of science and math.
			To develop in students a measure of skill in the use of common tools and machines.
			To provide pre-vocational exploratory experience to students interested in technical work.
			To teach a trade or skill to interested students.
			To develop worthy leisure time interests.
			To develop consumer knowledge and appreciation and use of industrial products.
			To assist students in making meaningful career choices.

8. Is Industrial Arts included in your State Plan?

yes _____ no _____

9. If the answer to #8 is yes, is Industrial Arts receiving funds?

yes _____ no _____

APPENDIX D

COLORADO INDUSTRIAL ARTS ASSOCIATION
AREA COMMUNICATION SESSION

DATA FORM AND QUESTIONNAIRE

C.I.A.A. AREA COMMUNICATION SESSION

IA/VE Project--Discussion Topics

1. What aspects of your programs are improving and show promise?

2. What are the major problems facing Industrial Arts in your area?

3. What do you see in the future for Industrial Arts? (female enrollment, funding, work experience, etc.)

4. What is the impact of Career Education on Industrial Arts in your areas?

5. What are your needs in Industrial Arts? (inservice, supervision, additional funding, etc.)

6. What is the relationship of Industrial Arts and Vocational Education in your school or district?

7. To what extent does your Industrial Arts program serve a pre-vocational function?

8. What do you think should go into a pre-vocational program?

APPENDIX E

CONFERENCE AGENDA

INDUSTRIAL ARTS/VOCATIONAL EDUCATION CONFERENCE

Continental Denver Hotel
Valley Highway at Speer Blvd.
Denver, Colorado 80211
303/433-6677

February 23, 24, and 25, 1976

Agenda

Monday, February 23:

3:00 - 6:00 PM	Participant Check-in
6:00 - 7:15 PM	Dinner
7:15 - 9:00 PM	Program
	- Review of Industrial Arts Objectives and Contribution - Dr. Bernard Dutton
	- Film
	- Identification of Critical Issues to Industrial Arts - Mr. Thomas Manion
	- State Guidelines for Industrial Arts - Dr. Calvin Frazier, Dr. William Woolf
	- Project Explanation - Dr. Maurice Thomas
9:00	Instructions to Group Leaders

Tuesday, February 24:

7:00 - 8:30 AM	Breakfast

8:30 - 9:30 AM	"WHERE ARE WE?" - A Review of Field Data and Discussion of Implication - Project Staff
9:30 - 10:30 AM	"WHERE ARE WE GOING?" - Group Discussion Philosophy of Industrial Arts Industrial Arts Contributions Industrial Arts/Vocational Education Relationships
10:30 - 10:45 AM	Coffee Break
10:45 - 12:00 AM	Role and Relationship of Industrial Arts and Vocational Education in Utah - Mr. Joe Luke, State Industrial Arts Supervisor
12:00 - 1:15 PM	Lunch
1:15 - 2:30 PM	Role and Relationship of Industrial Arts and Vocational Education in Oklahoma - Mr. Harold Winburn, State Industrial Arts Supervisor
2:30 - 2:45 PM	Break
2:45 - 4:30 PM	"HOW DO WE GET THERE?" - Group Discussion Review and Discuss: 1. The Data from the Field 2. The Objectives of Industrial Arts 3. Critical Issues 4. Data from Communication Sessions 5. Directions from State Leaders 6. Suggestions from Utah and Oklahoma Stimulated by the above, each group will: 1. Define the role of Industrial Arts in Colorado 2. Establish what the relationship should be between Industrial Arts and Vocational Education 3. Prepare recommendation for achieving 1 and 2

	Each group will turn in a written report at the conclusion of this session
6:00 - 7:15 PM	Dinner
7:15 - 8:30 PM	Group Report

Wednesday, February 25:

7:00 - 8:30 AM	Breakfast
8:30 - 10:30 AM	Conference Work Session
	The participants will discuss the group reports and arrive at a concensus concerning:
	1. The role of Industrial Arts in Colorado
	2. The Relationship between Industrial Arts and Vocational Education
	3. Recommendation for achieving 1 and 2
10:30 - 10:45 AM	Break
10:45 - 11:45 AM	Finalize written report of conclusions and recommendations
11:45 - 12:00 AM	Final details/reimbursement forms
12:00	Lunch and adjourn

APPENDIX F

CONFERENCE PARTICIPANTS

IA/VE CONFERENCE PARTICIPANTS

Mr. Kenneth Henderson
6162 Holland Street
Arvada, CO 80002

Mr. Terry Sapp
Doherty High School
4515 Barnes Road
Colorado Springs, CO 80917

Mr. Lloyd Torres
3101 S. Joplin Ct.
Aurora, CO 80232

Mr. L. D. Wallace
P. O. Box 535
Del Norte, CO 81132

Mr. Gayle Culbertson
Karval, CO 80823

Mr. Bill Newblom
7025 Queen Street
Arvada, CO 80004

Mr. George Trani
Doherty High School
4515 Barnes Road
Colorado Springs, CO 80917

Mr. Byron Lewis
Aspen School District #1
Box 300
Aspen, CO 81611

Mr. A. Gofredi
Mesa College
1120 North Avenue
Grand Junction, CO 81501

Mr. Al Renzelman
Coordinator of Career Education
Northeast Colorado B.O.C.S.
Haxtun, CO 80731

Mr. Dean Reimer
1413 Skyline
Fort Collins, CO 80521

Dr. Wendell Roy
Department of Industrial Arts
University of Northern Colorado
Greeley, CO 80639

Mr. Charles Tedrow
School of Applied Sciences and
Engineering Technology
University of Southern Colorado
Pueblo, CO 81004

Ms. Jean Werschke
Career Coordinator
Colorado Department of Education
State Office Building
Denver, CO 80203

Ms. Carmen R. Timiraos
Colorado Department of Education
1365 Logan Street
Denver, CO 80203

Dr. B.D. Hayes
Department of Industrial Sciences
Colorado State University
Fort Collins, Colorado 80523

IA/VE ADVISORY COMMITTEE

Mr. Thomas Manion
Denver School District
414 14th Street
Denver, CO 80202

Mr. Barnel Johnson
State Board for Community College
and Occupational Education
207 State Services Building
1525 Sherman Street
Denver, CO 80203

Dr. Duane Jansen
Department of Vocational Education
Colorado State University
Fort Collins, CO 80523

Dr. Robert Hammond, Chairman
Department of Industrial Arts
University of Northern Colorado
Greeley, CO 80639

Dr. David Parker
School of Professional Studies
Metropolitan State College
Denver, CO 80204

Mr. Curt Phillips
Pueblo School District 60
P. O. Box 3038
Pueblo, CO 81004

Mr. John Fisher
Box 269
Snowmass, CO 81654

Dr. Bernard Dutton
Department of Industrial Arts
Western State College
Gunnison, CO 81230

Dr. Richard Zimpel
State Board for Community Colleges
and Occupational Education
207 State Services Building
1525 Sherman Street
Denver, CO 80203

Mr. Gary Ruthven
1331 South Cody Way
Lakewood, CO 80215

PROJECT STAFF

Dr. Glen Rask
Department of Vocational Education
Colorado State University
Fort Collins, CO 80523

Dr. Maurice Thomas
Department of Industrial Sciences
Colorado State University
Fort Collins, CO 80523

Dr. Rodney Anderson
Department of Industrial Sciences
Colorado State University
Fort Collins, CO 80523

John Schroeer
Department of Industrial Sciences
Colorado State University
Fort Collins, CO 80523

APPENDIX G

CONFERENCE DISCUSSION GROUPS

IA/VE CONFERENCE

Discussion Groups

Group A

Manion - Group Leader

Timiraos
Jansen
Sapp
Tedrow
Torres

Group B

Parker - Group Leader

Fisher
Gofredi
Phillips
Trani
Werschke

Group C

Ruthven - Group Leader

Johnson
Lewis
Newblom
Reimer
Roy
Wallace

Group D

Zimpel - Group Leader

Culbertson
Dutton
Hammond
Henderson
Renzelman

APPENDIX H

SPEECHES OF CONFERENCE GUESTS

INDUSTRIAL ARTS VOCATIONAL EDUCATION CONFERENCE

February 23, 1976

The following is a paraphrased version of Dr. Calvin Frazier's speech to the Industrial Arts Vocational Education Conference on the evening of February 23rd. Dr. Frazier is the Commissioner of the Colorado Department of Education.

Dr. Frazier was given four questions to respond to. The first question he was asked was, what short or long range plans has your agency made that have implications for Industrial Arts? Dr. Frazier suggested that Industrial Arts people are going to have to compete and sell their contribution to that school system and to those kids, in such a way that people see Industrial Arts as a priority area or at least contributing to the priority. If we don't pursue this particular path that we're talking about, we might end up out on the fringe with people saying, "Oh well, its nice to have you", but we're really focusing on the basics or the central aspect of education. I think we're going to have to sell Industrial Arts and expand the concept of what constitutes Industrial Arts. It's not just making dust pans. You've got to come in and argue strongly for what you will contribute.

As Industrial Arts pertains to the department of education, I think our main involvement with you at this point, would be through three vehicles. First, is with Career Education. We see Industrial Arts as one of the main vehicles by which students can be exposed to a variety of career exploration programs. Industrial Arts should also be a career exploration contributor in higher education and in community colleges. A second vehicle is the new certification law that sets the standards by which Industrial Arts people are prepared. We are also developing an evaluation system that is going to come back to the department of education, and then we will discuss this and react with CSU in terms of what are the implications of the evaluation. This will allow us to decide what the needs are in terms of inservice and training programs for those groups that are involved.

Another effort we are involved with for the next eighteen months, is to work in a reassessment of secondary education. Five major studies have been done on secondary education reform. We're now asking that the high schools and junior highs in the state, take some of these findings from the five major studies, and start considering what they mean for secondary education in Colorado.

The second question, what should be the emphasis or commitment in Industrial Arts? It depends on what priorities you have identified throughout the state. Industrial Arts programs are going to have to beef up their curriculum if they are going to serve boys and girls in the program. This has caused panic with a few people. I haven't, however, found too many people expressing this concern. We do however, have to

be aware that this transition is not going to be easy for all Industrial Arts and Home Ec teachers, as we start getting co-ed courses. One of the reasons that the curriculum has not been expanded to include such areas as small appliance repair, snow mobile repair, motorcycle repair-type things, is that the graduate and undergraduate programs at the universities, have not been geared to accomodate these types of courses. I think there has to be change, and the recognition that woods and metal emphasis is not going to accomplish the kinds of things that we need to accomplish, such as exposing people to the world of manufacture and industry.

In your overview of objectives, I'm not sure that exploration and guidance was highlighted enough, to show that this should be an expectation in the Industrial Arts world. Maybe these objectives need to be looked at again. We've done a lot in terms of parent committees or advisory committees in Vocational Education programs. I would hope that junior high and high school people would utilize more parent and student committees to look at the curriculum of our Industrial Arts program in the junior and senior high.

We've got a lot of adults who are talking about coming back to school to clarify vocation objectives, and I'm not sure whether this fits into Vocational Education or whether Industrial Arts people are going to have to play more of a part in these programs. Evening exploratory programs could help these adults clarify their vocational needs. I see communities throwing these kind of demands more and more on Industrial Arts people, and I think in many ways, you're well qualified to provide this kind of initial exploration overview. These are some of the changes in terms of the relationships of Industrial Arts and Vocational Education.

I think Industrial Arts has done a lot of exciting things as I've traveled around the state. I'm pleased with a number of the Industrial Arts people. I was pleased last year to get acquainted with Dr. Wendell Roy and his projects at UNC, and what he was trying to do with the organization. Certainly, Terry Sapp and George Trani set good examples for you in Doherty High. I know from personal experience that this group has done a lot. So, if you're all equal to these two, you're in good hands. Thank you very much.

INDUSTRIAL ARTS VOCATIONAL EDUCATION CONFERENCE

February 23, 1976

The following is a paraphrased version of Dr. William Woolf's speech to the Industrial Arts Vocational Education Conference on February 23 and 24, 1976. Dr. Woolf is the Director of the State Board for Community Colleges in Occupational Education in Colorado.

I don't think you've really got a problem if you're content with the status quo. If you don't want extra resources and it really doesn't bother you about the differences in the programs across the state, then you don't have a problem. It seems to me that your problem only occurs as you begin a program of self-improvement and consistency. Being inconsistent is not all that bad in some areas. I would doubt very much whether you have consistency in English programs across the state. Apparently you're not satisfied, although I bet that there are individual teachers that are quite happy with the status quo in Colorado. The problem, is that you desire supervisors, and supervisory systems to work with administrators and to do all the things that supervisors do. You also desire to have workshops so that you can communicate better and upgrade your systems. If you want to do all these things that cost money, then what you have to do is find the money to do it with.

It seems to me that your professional organization should help along these lines. When I visited with your professional organization, the Colorado Industrial Arts Association, I found that they had visited with some 300, out of the 2800 programs in Colorado. That's better than some of our supervisors do in Vocational Education. You have come to me and asked me for a supervisor for Industrial Arts. The problem with this is, that we have no place to get a supervisor from, nor do we have the money. We can't take a T & I supervisor and put him in charge of Industrial Arts because they're already overworked. We can't take a technical supervisor and put him in charge of Industrial Arts for the same reason. The point is, where are we going to get the resource from? Shall I take it from my MIS section? There isn't any way to answer this problem. We just don't have the funds. This doesn't mean to say that we don't like Industrial Arts. We'll try to help in any way that we can. It just means that we don't feel as though it is appropriate to use the resources, if we had them, to be able to slide them over to the Industrial Arts area. The role and mission just aren't the same.

That brings us to a comparison between Industrial Arts and Vocational Education. The basic purpose of Industrial Arts is general education. There's nothing wrong with that. You ought to be proud of it, but you ought to understand that the Vocational Education purposes are employment. Our job is to make sure that the kids get into the right programs, make the right decisions, and are employed in the right areas and remain in those areas. Our curriculum is based on this task. Now the question is, do you as Industrial Arts educators want to be held accountable for those goals? That's what we're held accountable for in Vocational Education. It seems to me that we have different goals.

It's true we have similar procedures. We highly recommend you for your procedures, hands on training, good basic studies and relevance in teaching. We should be careful to understand that even though the procedure is the same, the basic content of what we're teaching, is different.

I see then, three possible paths for you to take in Industrial Arts. You can remain in General Education and teach about awareness of the world of work and industry, or you can go Vocational Education. Either one has serious consequences. If you go Vocational Education, you must consider that you're going to have to credential yourself. You're also going to have to change your curriculum to match Vocational Educations' and you're going to have to be accountable for the product of all these things. I see another possibility that Industrial Arts could follow, and that would be the role of Career Education.

The biggest job in Career Education is career exploration. It's a bigger job than preparation. Industrial Arts has a natural aptitude for this career exploration. You know that you're strong in it and you know that you like it. It is however, a very difficult job. Your goal if you decide to go into career exploration would be, how many students were able to make a rational career choice. That percentage has got to be high enough that it warrants all the expenditures and effort on your part. It's not an easy job. You'll have to make the decision if you're going to go General Education or to Vocational Education or move to Career Education. You can't do all three.

The next question, what short and long range plans has your agency made? I think the only thing that we can say to this is that we're pursueing Vocational Education as strongly as we can. In some ways it is competitive. We're competing for scarce resources. I apologize about that. I don't know how we can avoid that kind of a face-off because that's where we're at. In this day and age, there are scarce resources and as Dr. Frazier has mentioned earlier, there are priorities that have been set and established. And we've got to look at them very carefully.

What changes should be made in the Industrial Arts program? I think if I were in your shoes, I would go Career Exploration. It's a natural for you, as you've already got a base built. You've already got some programs that are up and running. You've got hands on experience and even some models. But you're not consistent or comprehensive enough. It means that you're going to have to tune up a lot of your programs to get the job done.

What should the relationship between Industrial Arts and Vocational Education be? That question is already answered. We need most of all, Vocational Education and Career Exploration programs. We need to have the kids make rational career choices. Our program quality would really improve. Our biggest problem is to get the right people in the right programs at the right time. And I feel that Industrial Arts in the career education function can best support this single goal and be a boon to Vocational Education. It will help us all get the right students.

Comments by Joe O. Luke
Industrial Arts Specialist, Utah

Transcribed by John Schroeer from a cassette tape made at the February 23 and 24 Industrial Arts/Vocational Education Conference.

1. Industrial Arts can now be included in State plans.

2. Thirty-nine states now are mentioned in their state plan.

3. Utah is not in their state plan.

   A. Utah has a unique method of funding - money is allocated by numbers of kids in programs.

4. If Industrial Arts was included in Utah's state plan, Vocational money could be used to pay Industrial Arts teachers salaries, due to the uniqueness of Utah laws. Vocational Education and Industrial Arts people don't want this.

5. Industrial Arts does receive funds for teacher education.

6. Industrial Arts does receive funds for curriculum development.

7. Recognized state approved exploration programs such as IACP, WOM, and WOC could receive funds for supplies and material.

8. Industrial Arts does receive Part D Exemplary funds for innovation, as Industrial Arts can do more for Vocational Education than any other, especially as it relates to Career Exploration.

9. In regard to facilities, tools and equipment, 95% of Vocational programs at the secondary level are taught by combination T & I and Industrial Arts teachers.

10. T & I and Industrial Arts use the same facilities, tools and equipment. Industrial Arts benefits from this.

11. Industrial Arts Career Development (This is a program of slides and tape prepared for the State Board of Utah)

12. As Dr. Frazier said, Industrial Arts must beef up its curriculum, or someone else may, Frazier said you have to expand your program.

13. De-emphasize woods and metals. Ninety-seven % of all wood-working vises manufactured in the United States today are sold to school shops.

14. Industrial Arts must expand to include both boys and girls.

15. When Industrial Arts comes closer to meeting their own objectives, Vocational Education may be more interested in Industrial Arts in Colorado.

16. Woolf said that Career Exploration (by Industrial Arts) is a big job he doubts can be done. I (Luke) think that Industrial Arts can do that, especially in the T & I area.

Comments by Harold Winburn
State Supervisor for Industrial Arts
in Oklahoma

Made for Industrial Arts/Vocational Education
Conference on February 24, 1976

1. The present system of education in Oklahoma has a general education/college prep section, and a Vocational/Technical education section.

2. Industrial Arts is in both and can therefore bridge the gap between General and Vocational education.

3. Oklahoma has a SDE Board and a Vocational/Technical Board. Industrial Arts supervisor is under the Vocational Technical Board, but has responsibilities on the SDE Board.

4. There is a continuing need for better understanding between Industrial Arts and T & I.

5. As a part of Vocational Education, Industrial Arts has the responsibility for providing programs that: (A) Assist individuals in making informed and meaningful occupational choices in industry and technology; (B) Provide occupational information and exploratory experiences pertaining to a broad range of occupations including training requisites, working conditions, salaries or wages and other relevant information, and; (C) Prepare individuals for enrollment in Vocational and Technical education programs.

6. Industrial Arts and T & I must identify their specific roles, so that they can best be served together.

7. Industrial Arts has its beginning at pre-school, and has no end point.

8. Industrial Arts and T & I should plan together for articulation, but not to the point of limiting Industrial Arts to Pre-Vocational.

9. Vocational Education serves 35% of people eligible for training. Industrial Arts can serve people that want and need practical arts but due to other career plans, don't fit or need vocational programs.

10. In Oklahoma, T & I is secondary and above, for entry level, or job improvement only. Industrial Arts is appropriate for all levels.

11. In oklahoma, Industrial Arts must maintain separate identity.

12. Industrial Arts must not be panicked into changes that will decrease its effectiveness in total education.

13. Oklahoma has accepted USOE clusters to provide Career Exploration in construction, power and transportation, communications and media, and manufacturing.

14. Manuals have been developed to help transition to the new career exploration concept.

15. A volunteer state plan for Industrial Arts has been approved by both state boards, but does not have the effect of law. Portions are being implemented in local school districts.

16. A pilot program of articulation between Industrial Arts and T & I is presently under way, with funds going to school districts as well as an area vocational technical school, at this time. It appears to come up to desired expectations.

17. In comparison:

    A. Industrial Arts provides orientation and exploration in the world of work.

    B. Industrial Arts provides promotion for General education skills.

    C. Vocational Education prepares for gainful employment.

    The two programs are complimentary rather than competitive.